

AMENDMENT TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9 (Cancelled)

Claim 10 (New): An electromagnetic actuator for actuating a gas exchange valve, the actuator comprising:

a lever having an armature and pivotably supported about a pivoting axis to allow actuation of the gas exchange valve by the lever at an actuation point on the gas exchange valve;

a first electromagnet in opposing communication with an upper armature portion of the armature, the upper armature portion having a length and a centre point to that length, the first electromagnet facilitating closing of the gas exchange valve; and

a second electromagnet in opposing communication with a lower armature portion of the armature, the lower armature portion having a length and a centre point to that length, the second electromagnet facilitating opening of the gas exchange valve;

wherein the centre point of the lower armature portion is closer to the pivoting axis than the centre point of the upper armature portion.

Claim 11 (New): The actuator of claim 10, wherein at least one of the armature portions includes at least one immersing portion disposed thereon and extending toward its respectively oppositely positioned electromagnet.

Claim 12 (New): The actuator of claim 10, wherein the lower armature portion includes at least one immersing portion disposed thereon and extending toward the second electromagnet.

Claim 13 (New): The actuator of claim 12, wherein the lower armature portion includes a

pair of immersing portions and the second electromagnet includes a yoke having a pair of poles extending toward the armature, wherein the immersing portions are positioned closer to the pivoting axis than the poles of the yoke of the second electromagnet.

Claim 14 (New): The actuator of claim 10, wherein at least one of the armature portions includes a flat opposing surface in opposing communication with its respective opposingly positioned electromagnet.

Claim 15 (New): The actuator of claim 10, further comprising at least one rolling member bearing disposed between the lever and the pivoting axis to provide pivoting support to the lever.

Claim 16 (New): The actuator of claim 10, wherein the armature is formed from a stamped part.

Claim 17 (New): The actuator of claim 13, wherein the yoke is formed from a stamped part.

Claim 18 (New): The actuator of claim 10, wherein the first electromagnet includes a yoke having a pair of poles extending toward the armature.

Claim 19 (New): The actuator of claim 18, wherein the yoke is formed from a stamped part.

Claim 20 (New): The actuator of claim 10, wherein the first and the second electromagnets each include a yoke having a pair of poles extending toward the armature.

Claim 21 (New): The actuator of claim 20, wherein at least one of the yokes is positionally adjustable relative to the armature.

Claim 22 (New): The actuator of claim 20, wherein at least one of the electromagnets generally has an E-like shape.

Claim 23 (New): The actuator of claim 20, wherein at least one of the electromagnets generally

has a U-like shape.